

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 1015761919  
Source: IFU5P  
Date Processed by STIC: 5-3-06

# ***ENTERED***



IFWP

## RAW SEQUENCE LISTING

DATE: 05/03/2006

PATENT APPLICATION: US/10/576,919

TIME: 11:19:45

Input Set : A:\ITR0041P SEQLIST.TXT

Output Set : N:\CRF4\05032006\J576919.raw

```

4 <110> APPLICANT: Ciliberto, Gennaro
5      De Francesco, Raffaele
6      Fattori, Daniela
7      Gallinari, Paola
8      Kinzel, Olaf D.
9      Koch, Uwe
10     Muraglia, Ester
11     Toniatti, Carlo
12     Cortese, Riccardo
13     Lahm, Armin
15 <120> TITLE OF INVENTION: ORTHOGONAL GENE SWITCHES
18 <130> FILE REFERENCE: ITR0041P
C--> 20 <140> CURRENT APPLICATION NUMBER: US/10/576,919
C--> 20 <141> CURRENT FILING DATE: 2006-04-24
20 <150> PRIOR APPLICATION NUMBER: PCT/EP2004/011683
21 <151> PRIOR FILING DATE: 2004-10-15
23 <150> PRIOR APPLICATION NUMBER: 60/514,362
24 <151> PRIOR FILING DATE: 2003-10-24
26 <160> NUMBER OF SEQ ID NOS: 62
28 <170> SOFTWARE: FastSEQ for Windows Version 4.0
30 <210> SEQ ID NO: 1
31 <211> LENGTH: 314
32 <212> TYPE: PRT
33 <213> ORGANISM: Human
35 <400> SEQUENCE: 1
36 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
37 1      5      10      15
38 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
39      20      25      30
40 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
41      35      40      45
42 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
43      50      55      60
44 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
45 65      70      75      80
46 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
47      85      90      95
48 Leu Leu Glu Cys Ala Trp Leu Glu Ile Leu Met Ile Gly Leu Val Trp
49      100     105     110
50 Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
51      115     120     125
52 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Met Val Glu Ile Phe
53      130     135     140

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54 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
55 145                      150                      155                      160
56 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
57                      165                      170                      175
58 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
59                      180                      185                      190
60 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
61 195                      200                      205
62 Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
63 210                      215                      220
64 Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
65 225                      230                      235                      240
66 Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
67                      245                      250                      255
68 Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
69                      260                      265                      270
70 Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
71                      275                      280                      285
72 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
73 290                      295                      300
74 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
75 305                      310
78 <210> SEQ ID NO: 2
79 <211> LENGTH: 314
80 <212> TYPE: PRT
81 <213> ORGANISM: Artificial Sequence
83 <220> FEATURE:
84 <223> OTHER INFORMATION: human sequence with a point mutation
86 <400> SEQUENCE: 2
87 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
88 1                      5                      10                      15
89 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
90 20                      25                      30
91 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
92 35                      40                      45
93 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
94 50                      55                      60
95 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
96 65                      70                      75                      80
97 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
98 85                      90                      95
99 Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 100                     105                     110
101 Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
102 115                     120                     125
103 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Met Val Glu Ile Phe
104 130                     135                     140
105 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
106 145                     150                     155                     160

```

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```

107 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
108           165           170           175
109 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
110           180           185           190
111 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
112           195           200           205
113 Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
114           210           215           220
115 Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
116 225           230           235           240
117 Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
118           245           250           255
119 Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
120           260           265           270
121 Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
122           275           280           285
123 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
124           290           295           300
125 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
126 305           310
129 <210> SEQ ID NO: 3
130 <211> LENGTH: 314
131 <212> TYPE: PRT
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: human sequence with point mutations
137 <400> SEQUENCE: 3
138 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
139 1           5           10           15
140 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
141           20           25           30
142 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
143           35           40           45
144 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
145           50           55           60
146 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
147 65           70           75           80
148 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
149           85           90           95
150 Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
151           100          105          110
152 Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
153           115          120          125
154 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Ile Phe
155           130          135          140
156 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
157 145          150          155          160
158 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
159           165          170          175

```

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```

160 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
161      180      185      190
162 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
163      195      200      205
164 Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
165      210      215      220
166 Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
167 225      230      235      240
168 Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
169      245      250      255
170 Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
171      260      265      270
172 Ser Arg Gly Gly Ala Ser Val Glu Thr Asp Gln Ser His Leu Ala
173      275      280      285
174 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
175      290      295      300
176 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
177 305      310
180 <210> SEQ ID NO: 4
181 <211> LENGTH: 314
182 <212> TYPE: PRT
183 <213> ORGANISM: Artificial Sequence
185 <220> FEATURE:
186 <223> OTHER INFORMATION: human sequence with point mutations
188 <400> SEQUENCE: 4
189 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
190 1      5      10      15
191 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
192      20      25      30
193 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
194      35      40      45
195 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
196      50      55      60
197 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
198 65      70      75      80
199 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
200      85      90      95
201 Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
202      100      105      110
203 Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
204      115      120      125
205 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Ile Phe
206      130      135      140
207 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
208 145      150      155      160
209 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
210      165      170      175
211 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
212      180      185      190

```

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Input Set : A:\ITR0041P SEQLIST.TXT

Output Set: N:\CRF4\05032006\J576919.raw

```

213 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
214      195      200      205
215 Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
216      210      215      220
217 Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
218 225      230      235      240
219 Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
220      245      250      255
221 Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
222      260      265      270
223 Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
224      275      280      285
225 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
226      290      295      300
227 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
228 305      310
231 <210> SEQ ID NO: 5
232 <211> LENGTH: 314
233 <212> TYPE: PRT
234 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: human sequence with point mutations
239 <400> SEQUENCE: 5
240 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
241 1      5      10      15
242 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
243      20      25      30
244 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
245      35      40      45
246 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
247      50      55      60
248 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
249 65      70      75      80
250 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
251      85      90      95
252 Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
253      100     105     110
254 Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
255      115     120     125
256 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Met Phe
257      130     135     140
258 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
259 145     150     155     160
260 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
261      165     170     175
262 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
263      180     185     190
264 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
265      195     200     205

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**VERIFICATION SUMMARY**

DATE: 05/03/2006

PATENT APPLICATION: US/10/576,919

TIME: 11:19:46

Input Set : A:\ITR0041P SEQLIST.TXT

Output Set: N:\CRF4\05032006\J576919.raw

L:20 M:270 C: Current Application Number differs, Replaced Current Application No

L:20 M:271 C: Current Filing Date differs, Replaced Current Filing Date